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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/209,982	12/09/1998	MICHAEL KAPLINSKY	08305/050001	6236

7590

06/16/2004

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EXAMINER

VILLECCO, JOHN M

ART UNIT

PAPER NUMBER

2612

21

DATE MAILED: 06/16/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/209,982

Applicant(s)

KAPLINSKY, MICHAEL

Examiner

John M. Villecco

Art Unit

2612

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 01 April 2004.
2a) ☒ This action is FINAL. 2b) ☐ This action is non-final.
3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1,3-9,11-13 and 15-18 is/are pending in the application.
4a) Of the above claim(s) _____ is/are withdrawn from consideration.
5) ☐ Claim(s) _____ is/are allowed.
6) ☒ Claim(s) 1,3-9,11-13 and 15-18 is/are rejected.
7) ☐ Claim(s) _____ is/are objected to.
8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date _____.
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

DETAILED ACTION IV

Response to Arguments

1. Applicant's arguments with respect to claims 1, 6, and 13 have been considered but are moot in view of the new ground(s) of rejection.
2. Nevertheless, the examiner will address the amendments made to the claims. Applicant has amended the independent claims to include the limitation of obtaining outputs of an image sensor indicative of reference colors including gray scale elements. Applicant argues that Kim teaches performing a different type of correction for the gray level than the correction performed for color correction. More specifically, it is assumed that applicant is drawing a distinction between the achromatic portion of the test chart and the chromatic portion of the test chart disclosed in Figure 3. Applicant is correct in stating that the gray level correction is performed according to the achromatic portion. However, the applicant's claim is directed toward performing color correction using gray scale references as colors. Therefore, as shown in Figure 3, the last line of the chromatic portion (12) of the test chart (10) is a gray scale line (col. 12, lines 25-27) used in the color correction.

Furthermore, taken in a more broad sense, the color correction unit (50) could be more broadly interpreted as being the color correction matrix disclosed in claim 1. In this interpretation the achromatic portion (11) of the test chart would be part of the reference colors and used in establishing the color correction unit (50).

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3. Since applicant has taken out the limitation of applying weight factors to the error measures (which necessitated a 103 rejection), a 102 rejection can now be used in rejecting the claims.

Claim Rejections - 35 USC § 102

4. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

5. **Claims 1, 4-9, 12, 13, and 17 are rejected under 35 U.S.C. 102(e) as being anticipated by Kim (U.S. Patent No. 6,320,668).**

6. Regarding *claim 1*, Kim discloses a color correction apparatus and method in an imaging system. Kim discloses obtaining reference outputs from an image sensor using a color image array (20). The reference outputs are derived from a chromaticity chart shown as reference number 12 in Figure 3. The chromaticity chart includes the primary colors (red, green, and blue) as well as 21 additional colors for a total of 24 colors. The system receives an input from a colorimeter and compares it to the input reference data. The system then operates to reduce an error between the colorimetric scanning data and the data obtained by scanning the chromatic test pattern (12) by computing a color coefficient correction matrix. See column 13, lines 40-64 and column 21, lines 18-50. In this manner the system is optimized for each of the input colors and color-corrected image is obtained. The applicant's claim is directed toward performing

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color correction also including gray scale references as colors. Therefore, as shown in Figure 3, the last line of the chromatic portion (12) of the test chart (10) is interpreted to be a gray scale line (col. 12, lines 25-27) used in the color correction.

7. Regarding *claim 4*, Kim discloses using 24 colors in the color chart (12). Thus, the system uses at least 7 colors. See column 12, lines 15-30.

8. As for *claim 5*, Kim discloses using 24 colors in the color chart. See column 12, lines 15-30.

9. With regard to *claim 6*, Kim discloses a color correction apparatus and method in an imaging system. Kim discloses obtaining reference outputs from an image sensor using a color image array (20). A spectral optical system is used which includes a color resolution filter (col. 7, lines 45). The system outputs spectral information regarding the RGB colors (col. 13, lines 46 and 47). This amounts to an interpolation to determine all color components that impinge on the pixel. The reference outputs are derived from a chromaticity chart shown as reference number 12 in Figure 3. The chromaticity chart includes the primary colors (red, green, and blue) as well as 21 additional colors for a total of 24 colors. The system receives an input from a colorimeter and compares it to the input reference data. The system then operates to reduce an error between the colorimetric scanning data and the data obtained by scanning the chromatic test pattern (12) by computing a color coefficient correction matrix. See column 13, lines 40-64 and column 21, lines 18-50. The color correction-processing unit acts as the image interpolator since it performs the color correction. In this manner the system is optimized for each of the input colors and color-corrected image is obtained. The applicant's claim is directed toward performing color correction also including gray scale references as colors. Therefore, as shown in Figure 3, the

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last line of the chromatic portion (12) of the test chart (10) is interpreted to be a gray scale line (col. 12, lines 25-27) used in the color correction.

10. Regarding *claim 7*, Kim discloses that the color chart (12) includes red, green, blue, white, and 20 additional colors. See column 12, lines 15-30.

11. As for *claim 8*, Kim discloses using 24 colors in the color chart. See column 12, lines 15-30.

12. With regard to *claim 9*, as shown in column 21, lines 18-50, Kim discloses calculating minimum value for each of the error values of the red green and blue components of the input colors. In this case the reference is denoted as P_{Ri} , P_{Gi} , and P_{Bi} . The input colorimetric data is denoted as \underline{P}_{Ri} , \underline{P}_{Gi} , and \underline{P}_{Bi} .

13. Regarding *claim 12*, Kim discloses using each color of the color chart (12) to produce a color correction matrix. See column 11, line 65 to column 12, line 41.

14. As for *claim 13*, Kim discloses a color correction apparatus and method in an imaging system. Kim discloses obtaining reference outputs from an image sensor using a color image array (20). A spectral optical system is used which includes a color resolution filter (col. 7, lines 45). Inherently a color filter operates to supply only light of a certain wavelength to the pixel which it covers. The system outputs spectral information regarding the RGB colors (col. 13, lines 46 and 47). The reference outputs are derived from a chromaticity chart shown as reference number 12 in Figure 3. The chromaticity chart includes the primary colors (red, green, and blue) as well as 21 additional colors for a total of 24 colors. The system receives an input from a colorimeter and compares it to the input reference data. The system then operates to reduce an error between the colorimetric scanning data and the data obtained by scanning the chromatic

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test pattern (12) by computing a color coefficient correction matrix. See column 13, lines 40-64 and column 21, lines 18-50. In this manner the system is optimized for each of the input colors and color-corrected image is obtained. The applicant's claim is directed toward performing color correction also including gray scale references as colors. Therefore, as shown in Figure 3, the last line of the chromatic portion (12) of the test chart (10) is interpreted to be a gray scale line (col. 12, lines 25-27) used in the color correction.

15. As for *claim 17*, the equations represented by the color correction processing unit would inherently be solved simultaneously.

Claim Rejections - 35 USC § 103

16. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

17. **Claims 3, 11, 15, 16, and 18 are rejected under 35 U.S.C. 103(a) as being unpatentable over Kim (U.S. Patent No. 6,320,668) in view of Yamaguchi (Japanese Publ. No. 02-074367 A).**

18. Regarding *claim 15*, as mentioned above in the discussion of claim 1, Kim discloses all of the limitations of the parent claim. However, Kim fails to disclose weighting certain colors more than others. Yamaguchi, on the other hand, discloses that it is well known in the art to weigh some colors more than others when constructing a color correction matrix. See the abstract. By choosing certain colors to be weighted more than others, the system is placing more

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emphasis on specific colors. By placing more emphasis on certain colors such as flesh tones, the colors which are important and to which the eyes are more sensitive will be emphasized, thus producing a higher quality image. Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to emphasize the error measurements of specific colors in Kim so that colors which are important to an image are given more weight, thereby forming a better image.

19. As for *claim 3*, as shown in column 21, lines 18-50, Kim discloses calculating a minimum value for each of the error values of the red green and blue components of the input colors. In this case the reference is denoted as P_{Ri} , P_{Gi} , and P_{Bi} . The input colorimetric data is denoted as \underline{P}_{Ri} , \underline{P}_{Gi} , and \underline{P}_{Bi} .

20. As for *claim 16*, as mentioned above in the discussion of claim 15, Yamaguchi discloses weighing some colors more than others. One of ordinary skill in the art would recognize that red, green, blue, human skin, and gray elements are all important color in composing an image, and thus it would have been obvious to one of ordinary skill in the art to weigh these colors more than the dull colors.

21. With regard to *claim 11*, as mentioned above in the rejection of claim 6, it is obvious to weight colors which are important (and to which the eye is more sensitive to), higher than other colors, so that a higher quality image is formed. It is well known in the art that red, green, and blue are very important colors, and thus it would have been obvious to one of ordinary skill in the art to weigh these colors more than the dull colors.

22. Regarding *claim 18*, as mentioned above in the discussion of claim 6, Kim discloses all of the limitations of the parent claim. However, Kim fails to disclose weighting certain colors

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more than others. Yamaguchi, on the other hand, discloses that it is well known in the art to weigh some colors more than others when constructing a color correction matrix. See the abstract. By choosing certain colors to be weighted more than others, the system is placing more emphasis on specific colors. By placing more emphasis on certain colors such as flesh tones, the colors which are important and to which the eyes are more sensitive will be emphasized, thus producing a higher quality image. Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to emphasize the error measurements of specific colors in Kim so that colors which are important to an image are given more weight, thereby forming a better image.

23. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

- **Endo (U.S. Patent No. 6,256,062)** discloses correcting color using a color chart wherein the user can select a specific color to weight more than the others. See column 6, line 46 to column 7, line 29. Additionally, Endo discloses optimizing an error between a reference signal and an input signal (col. 10, lines 10-21).
- **Kuwata (U.S. Patent No. 6,535,301)** discloses weighing some colors in an image (ie. green, blue, flesh colors) more than others.

24. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a).

Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after

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the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Any response to this final action should be mailed to:

Box AF
Commissioner of Patents and Trademarks
Washington, D.C. 20231

or faxed to:

(703) 308-6306, (for formal communications; please mark **"EXPEDITED PROCEDURE"**; for informal or draft communications, please label **"PROPOSED"** or **"DRAFT"**)

Hand-delivered responses should be brought to Crystal Park II, 2121 Crystal Drive, Arlington, VA., Sixth Floor (Receptionist).

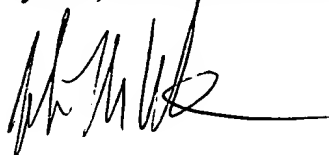
Any inquiry concerning this communication or earlier communications from the examiner should be directed to John M. Villecco whose telephone number is (703) 305-1460.

The examiner can normally be reached on Monday-Thursday.

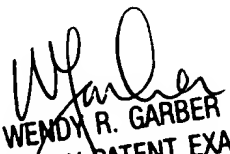
If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Wendy Garber can be reached on (703) 305-4929. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).



John M. Villecco
June 2, 2004



WENDY R. GARBER
SUPERVISORY PATENT EXAMINER
TECHNOLOGY CENTER 2600